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## 2015 AQ Summit: Research Update by Mary Ellen Camire

Mary Ellen Camire

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# From Pen to Plate- Food Science and Technology Benefit Aquaculture R & D

**Mary Ellen Camire, PhD, CFS**  
School of Food & Agriculture  
University of Maine





# Mary Ellen Camire, PhD, CFS

## Professor

- Understanding how aquaculture practices, processing, and consumer attitudes influence food acceptability.
- Extrusion cooking:
  - Extruded foods and feeds containing seafood.
  - Healthful aquaculture feeds.
- Analytical capabilities:
  - Fatty acids, including omega-3's
  - Dietary fiber
  - Total antioxidant, phenolic acids, anthocyanins
- Product development:
  - Creation of new food products with high sensory quality and to meet nutrition labeling guidelines.



# UM Sensory Evaluation Center

## Facilities

- 12 private booths
- SIMS 2000 sensory software
- Kitchens
- Conference room



## Services

- Consumer acceptability
  - Central location tests, home use tests
- Overall or characteristic difference testing
- Focus groups
- On-line surveys
- Training employees to do in-house testing





# Balu Nayak , PhD

## Assistant Professor

### Expertise: Food processing/ Food Process Engineering



- Sea-vegetable processing:
  - Processing & storage effects on physical & chemical attributes of sea-vegetables.
  - Optimization of retention of bioactive compounds and other quality attributes of processed sea-vegetables.
- Seafood allergens:
  - Improved extraction & detection of crustacean allergens in processed foods.
  - Crustacean allergens in compost.
  - Development of hypoallergenic seafood foods using novel processing technologies.



# Denise Skonberg, PhD

## Associate Professor



- Assessing effects of aquaculture feeds and production practices on product quality:
  - Nutritional and chemical composition
  - Shelf life analyses
  - Physical attributes (texture, color, ...)
- Utilization of seafood processing by-products:
  - New food products and functional ingredients
- Developing and evaluating processing technologies for farm-raised seafood





## UM Cooperative Extension Food Scientists



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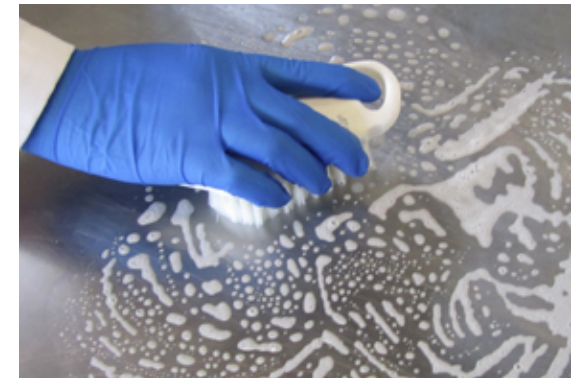




# Food Safety Programs

- **Food industry workshops designed to meet Maine seafood processor needs:**
  - General commercial sanitation
  - Food Safety Programs mandated by the FDA:
    - Seafood Hazard Analysis Critical Control Points (HACCP)

Maine Dept. of  
Agriculture,  
Conservation and  
Forestry

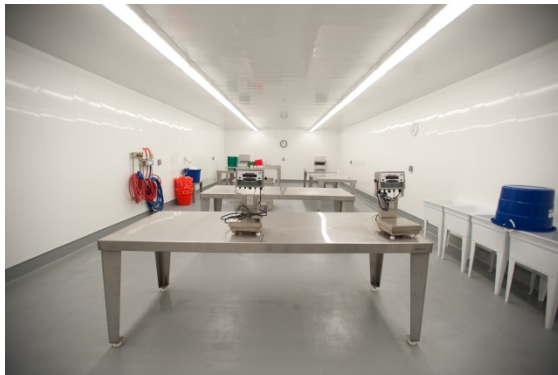






# Food Science Personalized Outreach

- One on one consulting (phone, email, meetings)
- Facility design assistance/on site visits
- Sanitation program review/guidance
- HACCP plan review/guidance
- Validation studies (seafood)
- Product and process review





# Michael G. Murphy, MS Pilot Plant Manager

- Trial processing and product development services are available.
- Relevant equipment includes:
  - Large-capacity blast freezer
  - Koch smoke house
  - Vacuum tumbler
  - Hobart combination steam and convection oven
  - Latrim belt-driven steam convection cooker
  - Freeze-dryer





# Research Partner Services

- Assistance with preparing research grants
  - Grant panel experience
    - MTI
    - USDA/NIFA SBIR and Post-Harvest Food Safety
  - Institutional review compliance
  - Trial processing (products not intended for sale)
  - Analyses of raw and processed products
- Confidential contract research
- Consultation regarding health and structure-function claims



## Contacting Us

- Email is best.
- We need at least a month's notice before grants are due so that we can comply with UM requirements.